

Developing Textile Entrepreneurial Inclination Model by Integrating Experts Mining and ISM-MICMAC

Abstract: The Indian textile industry is lacking in an entrepreneurial inclination of a skilled young generation; because of this, the industry is facing a challenge to achieve sustainable development and growth. To overcome this problem, the goal of this work is to build an entrepreneurial inclination model in the context of the textile industry. For achieving this goal, a combined approach of an extensive literature review and experts mining has been used to establish the entrepreneurial inclination factors in phased of the study. In the second phase, an Interpretive Structural Modelling (ISM) with Matrice d'Impacts Croisés Multiplication Appliqués à un Classement (MICMAC) has been applied to build a structural model and to find the driving force factors and dependence power. The results show that effective entrepreneurship courses, institutional policy, training and internship, institutional corporation and the involvement of institutional heads play a very significant role in encouraging youth towards entrepreneurship. The outcomes of the study can help both the government and academic institutes to draw up effective policy and develop an entrepreneurial culture which can help to create more entrepreneurs in the textile field.

Keywords: Enterprise Resources Planning (ERP); Textile Industry; Strategy; Interpretive Structural Modelling (ISM); Institutional Policy.

1. Introduction

Today, one of the social developmental problems faced by the Indian Government is unemployment, especially for engineering graduates. Some of the reasons for this problem are the status of engineering graduates, the mismatch of both skills and abilities of graduates with the requirements of employers, the appropriateness of graduate employment and the shrinkage of employment and lack of opportunities in the public sector as the private sector grows (Sharma 2013). Despite a remarkable economic growth rate, the nation continues to face problems of unemployment as well as income imbalance among the various income groups (Sharma 2013; Pathak and Varshney 2017). More than sixty-five percent Indian are below age thirty five and they are sharply increasing and proportionally in the future (Wu and Benson 2016; Pathak and Varshney 2017). Therefore, to solution the unemployment problem,

entrepreneurship is one the possible solutions for it ([Bhandari 2006](#); [Shane and Niwlaou 2015](#)).

The economists, social commentators and policy makers say that entrepreneurship stimulates the range of employment opportunities and wealth creation among the unemployed ([Yusof et al. 2008](#); [Somnath 2014](#); [Shane and Niwlaou 2015](#)) and can contributes in all aspects of the society ([Kiiru and Iravo 2015](#); [Ooi and Nasiru 2015](#); [Leloux et al. 2017](#)).

The scarcity of employment opportunities in both the formal and non-formal markets is the source of the high unemployment rate among graduates ([Yusof et al. 2008](#); [Somnath 2014](#); [Shane and Niwlaou 2015](#)). Many students have great potential to start up business ventures given their level of education ([Yusof et al. 2008](#)). The question is, do students possess a positive attitude towards entrepreneurship? Graduate students, youth unemployment, an uncertain job market, constant change among institutes, candidates' expectations from institutes, competition and changing needs of the market all combine to make the situation complex in finding suitable employment ([Oehler et al. 2014](#)). Changes in knowledge base, knowledge trading and the changing role in educational institutes' functions have made it necessary to encourage academic entrepreneurship ([Brockhaus 1994](#)). Change and development in society mean that subsequent changes in educational institutions are needed to reflect this. Although the primary function of institutes is imparting education, they have to respond to the needs of society and proactively move into research which will encourage academic entrepreneurship ([Somnath 2014](#)).

Entrepreneurship of students is becoming a major issue globally, with both competition and collaboration becoming more prominent as obstacles are being overcome ([Gnoth 2006](#); [Wu and Benson 2016](#)). Most national and international organizations are trying to foster entrepreneurship among students, taking as granted that this will have a substantial impact on the future development of innovation, as well as providing a boost towards the creation of wealth. Entrepreneurship education and training are currently not inter-connected. There needs to be more focus on the requirements of the market with research directed towards appropriate commercial targets. Current policy does not support education and training in terms of finance or the provision of internships ([Wu and Benson 2016](#)). To promote entrepreneurship in engineering students and to increase employment through this enterprise, it is necessary to study and explore the entrepreneurial inclination of students and their driving factors. This work tries to solve the gap in academic entrepreneurship by providing a basic structural model on inclination towards entrepreneurship in the context of the textile

industry by understanding the cause and effect of variables which directly influence the inclination of engineering students. The study suggests an educational strategy and policy for enhancing and motivating students towards entrepreneurship. Therefore, it is necessary to understand how entrepreneurship education can impact on the inclination of students in such a way that entrepreneurship can be seen as a career opportunity for engineering students. This study is an attempt to identify how to promote entrepreneurship as a career option. The study outcomes can provide a possible strategy for educational institutions to create an awareness and motivation among young minds to equip them with skills, knowledge, capability and the experience required for effective business ownership.

This study has been conducted in the context of the textile industry. The textile sector of India is known to be the backbone of the national economy. Being the largest patron of the nation's total export business, its contribution stands at 11% towards the economy (Raichurkar and Ramachandran 2015). The GDP contribution of the industry is 5% and 14% towards overall Index of Industrial Production (Raichurkar and Ramachandran 2015; Patidar, 2017). The textile industry is accommodating the highest number of workers serves as one of the country's largest employers and its value is around US \$108 billion and is expected to reach US \$141 billion by 2021 (Raichurkar and Ramachandran 2015). To attract investment in the textile sector, the central government is taking measures such as interest rate reduction, labour law liberalization and passing bills which are industry friendly. Attractive opportunities are being created by the state government with the introduction of an industry-friendly textile policy which aims to increase textile production substantially by attracting investment options. The durability of the textile industry is significant because of the stable foundation of a production base of natural fibres and man-made fibres (Raichurkar and Ramachandran 2015; Patidar, 2017). But in current literature, no discussion is taking place on the development of a textile entrepreneurial inclination model by integrating experts mining and ISM-MICMAC. Therefore, the contribution of this work is to develop the inclination model and to find the drive and dependence power for entrepreneurial inclination variables through experts mining technique and ISM-MICMAC.

The entire work is divided into six parts. In the first part, introduction of the study is provided. Literature review is given in second part and third part is related to methods and research framework. Data collection and analysis are explained in the fourth part. Outcomes and discussion are advised in the fifth part. Policy implications and future work are provided in the six part of the study.

2. Literature Review

In this section, we provide the literature review related to scenario of entrepreneurial and textile industry. Then, identify the research gaps related to the study of influential factors on textile entrepreneurial inclination and mentioned the contribution of the study in this regard.

2.1 Entrepreneurial inclination

To create more job opportunities for the young graduate, Entrepreneurship is one the solution. A study of the literature has been conducted to reveal the entrepreneurial inclination. In 1994, [Krueger and Brazeal](#) noted that personal entrepreneurial behaviour is playing a very important role for planning which can help to think about entrepreneurial inclination of students. A meta-analysis has been carried out by [Collins et al. \(2004\)](#), and they found that individuals who pursued entrepreneurial careers scored significantly higher on developing motivation than individuals who pursued other types of careers. [Van Auken et al. \(2006\)](#) stated that social environment factors and government support are important factors in influencing an individual's entrepreneurship. In the same year, Lee and Lee (2006) conducted a study on Korean universities' students and identified the importance of courses of entrepreneurship and its impacts on students their entrepreneurial inclination. [Pittaway and Cope \(2007\)](#) pointed out that while developing the programmes that would cater for the needs of an entrepreneurship programme. Entrepreneurship intentions of students are defined by their perception about their ability to do something influential. [Singh Sandhu et al. \(2011\)](#) conducted study on postgraduate students in Malaysian and discussed about barriers and entrepreneurial inclination of the students. They determined that lack of social networking and lack of resources and aversion to risk are the major barriers.

[Turker and Sonmez Selçuk \(2009\)](#) discussed about which factors are responsible for entrepreneurial intention of university students. For this study, 300 university students' data in Turkey is used for analysis and the results shows that educational and structural support factors affect the entrepreneurial intention of students. In the same year, [Shinnar et al. \(2009\)](#) explained about the factors of entrepreneurship programmes other than what had been previously described. One factor identified is the prospect of student-family conflict. As per the study, the faculty responsible for the facilitation and creation of entrepreneurship programmes must design provision appropriately so as to benefit the students in enhancing

their capability, perception, desirability and feasibility of going beyond in their entrepreneurial objective. For this reason, the faculties must recognize the students' entrepreneurial intentions, motivations and the probable barriers that might hinder the students' vision (Garzón 2010). When students pursue their engineering at that time entrepreneurial motivation is playing a very important to create their inclination towards entrepreneurship (Solevik, 2013). Yasin et al. (2011) examined the students' inclination towards entrepreneurship, for this they collected the data from technical and non-technical students and tried to measure their attitude about entrepreneurship. They suggested how we can make institute syllabus more effective so that it can helpful for the students who want to become entrepreneur.

Kiiru and Iravo (2015) noted that the determinants of entrepreneurial intentions and job attraction are the second best predictor, whereas social valuation was found to be negatively significant with regard to entrepreneurial intentions among youth. Brankovic et al. (2016) discussed about developing entrepreneurial universities in a post-communist country. He suggested that individual cooperation of academics and industry will play a dominant role developing entrepreneurial universities. Alonso-Gonzalez et al. (2017) studied that the role of universities towards innovation, creativity and entrepreneurship by taking case study of Colombia. In the year, RezaeiZadeh et al. (2017) studied about the relationship between entrepreneurial competencies and their importance. This study is a comparative study of three groups i.e. students, academics and entrepreneurs of Iran and Ireland.

2.2 Research Gaps and Contribution

With 50 lakh of the citizens being employed in the Indian textile industry, this is the single largest industry where people are engaged and contributing either directly or indirectly with 1800 textile mills across the country. But, this industry is facing problems in attracting the young generation and creating new opportunities for them. In current literature, there is little research available in this area. Palit and Mukherjee (2017) concluded in their study that skill development is the most important factor. The Indian government has introduced many initiatives to enhance the skills of textile industry employees; this would encourage more of the younger generation to seek employment in this industry. But still, the industry is facing a challenge to make sustainable development and growth because of an absence in the entrepreneurial inclination of a skilled young generation (Brauers and Zavadskas 2012).

It is clear that, develop a textile entrepreneurial inclination model has not been investigated in the literature. Contributions of this paper, at first, are to explore the entrepreneurial inclination factors using structured literature review and experts mining. Secondly, an entrepreneurial inclination model by taking perspective of Indian textile industry is proposed, which demonstrates interrelations among the identified factors using ISM-MICMAC techniques.

3. Material and Methods

A two phased methodology has been used to conduct this study. In the first phase, after completing an extensive literature review on entrepreneurial inclination variables, experts mining has been carried out through interviews with academic experts and entrepreneurs for finalizing the variables. In the second phase, Interpretive Structural Modelling (ISM) methodology is employed to determine the contextual relationship between variables; a flow chart of proposed methodology is described in Figure 1.

[Figure 1 about here]

3.1 Experts Mining

A rigorous expert process has been followed to conduct this study. A team of experts including director/professors from technical institutes, especially textile education institutes, textile consultants, textile entrepreneurs and policymakers has been identified. A questionnaire was designed consisting of entrepreneurial inclination variables identified from the literature followed by discussion with experts in the field of entrepreneurship including textile entrepreneurs and academicians from this discipline. Group decision can be affected by the size of the group, and to ensure validation of group decisions, 5-20 expert opinions are required ([Anderson et al. 2001](#)).

3.2 Interpretive Structural Modelling

For developing several types of structure, including influence structures, priority structures and categorizations of ideas, ISM is used ([Ravi and Shankar 2005](#)). This approach has been employed in different fields such as manufacturing ([Panahifar et al. 2014](#); [Thirupathi and Vinodh 2016](#)), green supply management ([Sivaprakasam et al. 2015](#)), energy industry ([Alizadeh et al. 2016](#)), the Indian automobile industry ([Gopal and Thakkar 2016](#)),

new product development (Chang et al. 2013), green lean six sigma product development (Kumar et al. 2016) and lean remanufacturing (Vasanthakumar et al. 2016) etc. The ISM methodology has the following steps (Kumar et al. 2016):

- Recognize the variables linked to the problem addressed in the research. For instance, in present work, entrepreneurial inclination factors are recognized through literature survey as per study of de Barros et al. (2015) and feedback of experts
- Develop structural self-interaction matrix (SSIM) of listed entrepreneurial inclination factors through pair-wise comparisons between them
- Develop initial reachability matrix using SSIM and transformed into transitivity matrix. To develop transitivity matrix, transitivity relations are considered among listed factors
- Develop various levels from transitivity matrix
- Compute driving and dependence power from transitivity matrix. Use MICMAC to develop a graph of listed factors
- Develop the digraph of listed factors through transitivity matrix. The developed digraph is useful in illustrating the visual picture of factors and their interrelationships. Develop the ISM based structural model of entrepreneurial inclination factors using digraph.
- Analyse the developed ISM model for its consistency through expert's inputs. In case of any consistency, some suitable actions required.

4. Data Collection and Analysis

In this section, the related data to analyse the factors related to developing textile entrepreneurial inclination model has been collected and analysed. Further details have been provided in the following subsections.

4.1 Experts Mining

To establish the entrepreneurial inclination factors, the keywords like entrepreneurial inclination factors and/or motivators/key factors/influential factors on textile entrepreneurial inclination etc. have been searched from 2000 to 2017 using structured literature review. After doing extensive literature review, out of 174 published papers only 42 were found to meet the criteria of this study and these papers helped us for identifying 24 entrepreneurial inclination factors. Further, experts' mining was used to validate/establish identified entrepreneurial inclination factors. A total of 18 experts belonging to major industries and working on decision-making positions have been contacted personally to carry out the experts

mining. Their feedback on a scale of 1-5 were meticulously recorded, along with extensive details of experts related to the domain, designation and work experience as given in Table 1.

[Table 1 about here]

Based on expert's agreement, we deleted the factors with the mean scores below 3.5; thus, no factor was eliminated from the initial list. Further, we also asked experts to add/include any other factor, which they thought is significant in developing textile entrepreneurial inclination in an Indian context. All in all, they satisfied with the list and were agreed to include one factor named 'Independent attitude (F_{22})'. Hence, a total of 25 entrepreneurial inclination factors along with their brief definitions, their sources and experts mining score for each variable are presented in Table 2.

[Table 2 about here]

4.2 Self-Structured Interaction Matrix (SSIM) Formulation

For analysis, a contextual relationship of 'leads to' type was chosen, with the following four symbols used to denote the direction of relationship between the benefits (i and j): The Self-Structured Interaction Matrix (SSIM) given in Table 3 shows where V, benefit i will help in achieving benefit j ; where A, benefit i will be achieved by benefit j ; where X, benefits i and j will help in achieving each other and where O, benefits i and j are unrelated. Relationships V, A, X and O in the SSIM, explains as follow:

- 1) Factor 2 helps to achieve factor1, meaning that when 'an effective entrepreneurship course is implemented it 'improves the inclination of students towards entrepreneurship.' This relationship is represented as 'V'.
- 2) Factor 3 can be achieved by factor1, means 'Eco-system of entrepreneurship will improve if the inclination towards entrepreneurship is increased. This relationship is represented as 'A'.
- 3) Factor 4 and factor 5 help achieve each other, means 'head of institution' helps in achieving 'effective institutional policy for entrepreneurship' and vice-versa. This relationship is represented as 'X'.
- 4) Factor 14 and 24 are not related means that there is no direct relationship between 'Social stigma' and 'Ambition for growth in career and represented as 'O'.

[Table 3 about here]

4.3 Development of Reachability Matrix

The initial reachability matrix is found by transforming of SSIM into a binary matrix, per the case with following rules:

If (i, j) entry in the SSIM is	then (i, j) entry in the reachability matrix becomes	and the (j, i) entry in the reachability matrix becomes
V	1	0
A	0	1
X	1	1
O	0	0

After using rule 4, the transitivity of the final reachability matrix has been checked. Table 4 shows the ‘Initial reachability matrix’ and in Table 5, the driving power (*i.e.* the root of some more factors) and dependence factors (*i.e.* those which are most influenced by others) of each benefit are also shown. The driving power of a benefit is the total number of benefits which can be achieved including the benefit itself. The dependence of a factor is the total number of factors that help in achieving it.

[Table 4 about here]

[Table 5 about here]

The final reachability matrix or transitivity matrix is obtained by incorporating the transitivity check whereby, if element i reach to element j and element j reaches to element k then element i should reach to element k . The driving power for each determinant is the sum of the total determinants (including itself), which helps in achieving it. Dependence is the sum of the total determinants (including itself) which helps in achieving it (Gnyawali and Fogel 1994; Ravi and Shankar 2005). The reachability specified for a variable includes the variable itself and the variables driving it. The preliminary set consists of the variable itself and the dependent variables.

Finally, the junction of these sets is derived for all the benefits. The variables for which the reachability and the intersection sets are equivalent are given the top priority in the ISM hierarchy, as they would not help in achieving any other variable above their own level. Those variables are finally abandoned after the recognition of the remaining variables. First iteration for level partitioning is shown in Table 6.

[Table 6 about here]

After marking 1st level to the factor (see Table 6), we eliminated that factor. We iterated this procedure till each variable obtained at least one level. A total of six iterations have been performed to achieve level of each variable. The remaining iterations are shown in Annexure-1.

[Annexure-1 about here]

An ISM methodology is applied to measure the entrepreneurial inclination of textile engineering students. This measure is successful only if it is rightly interpreted by experts and stakeholders. A structure model is developed by the researcher using vertices or nodes to present the result graphically. The relationship between factors is shown with the help of arrows in the ISM model. Presentation of this nature is called a digraph. A digraph pictorially interprets the contextual relationship between each of these elements and their hierarchies as derived by modelling.

5. Outcomes and Discussion of Findings

The outcome of the study is explained through the Matrice d'Impacts Croisés Multiplication Appliqués à un Classement (MICMAC) analysis which investigates the driving power and the dependence of the factors. Figure 2 shows the MICMAC diagram with the benefits classified into four clusters.

[Figure 2 about here]

No factor is coming in the first cluster (weak driving power and weak dependence). It means that all considered factors are interrelated. The second cluster contains of the dependent factors that have weak driving power but strong dependencies on other factors. These factors primarily come at the top levels of the ISM based model. Nine factors ('Inclination towards entrepreneurship (F₁)', 'High-risk problem (F₈)', 'Perceived insecurity (F₉)', 'Perceived fear (F₁₀)', 'Lack of Skills (F₁₁)', 'Bear risk and responsibility (F₁₆)', 'Mental maturity (F₁₇)', 'Eco system of entrepreneurship (F₃)' and 'Social stigma (F₁₄)') are coming in this cluster.

The third cluster contains the factors that have strong driving power and also strong dependence. They are primarily middle-level factors such as 'Networking with entrepreneur (F₆)', 'Lack of clarity in government policy (F₁₃)', 'Creativity (F₁₅)', 'Crazy ideas (F₁₈)',

‘Adaptability to change (F₁₉)’, ‘Leadership attitude (F₂₀)’, ‘Self-belief attitude (F₂₁)’, ‘Independent attitude (F₂₂)’, ‘Ability to develop the network (F₂₃)’, ‘Ambition for growth (F₂₄)’ and ‘Logical thinking (F₂₅)’ come into this category. Since these factors are dependent on other factors, they also drive top level factors.

Those factors have strong driving power but weak dependencies are in fourth cluster and lie at the bottom of the ISM model; they are ‘Effective entrepreneurship course (F₂)’, ‘Institutional policy (F₄)’, ‘Training and Internship (F₇)’, ‘Institutional support (F₁₂)’ and ‘Involvement of head of institution (F₅)’. The factors which lie in the third cluster need extraordinary consideration and proactive attention from the heads of institutions since these are the dependent high driving power factors. The determined levels help in frame working the digraph and the ultimate model of ISM. As per the reachability matrix, the original digraph along with transitive links is obtained. The final graph or the ISM based model is then obtained after removing the indirect links (see Figure 3).

[Figure 3 about here]

It can be seen that ‘Effective entrepreneurship course (F₂)’, ‘Institutional policy (F₄)’, ‘Training and Internship (F₇)’, ‘Institutional support (F₁₂)’ form the base of the ISM hierarchy with ‘Inclination towards entrepreneurship (F₁)’ at the top level, reflecting the effectiveness of all of the factors. Inclination towards entrepreneurs is the desired outcome; these factors have the interrelationship each other and direct relationship with the factor (F₅) which is ‘Involvement of head of the institution’. This relationship define the role of any institute head for developing effective entrepreneurship course, build institutional policy, providing the training and internship to students on required time and providing the institutional support. The factor F₅ has the interrelationship with ‘Networking with entrepreneur (F₆)’, ‘Lack of clarity in government policy (F₁₃)’, ‘Creativity (F₁₅)’, ‘Crazy ideas (F₁₈)’, ‘Adaptability to change (F₁₉)’, ‘Leadership attitude (F₂₀)’, ‘Self-belief attitude (F₂₁)’, ‘Independent attitude (F₂₂)’, ‘Ability to develop the network (F₂₃)’, ‘Ambition for growth (F₂₄)’ and ‘Logical thinking (F₂₅)’. These factors have a direct relationship with ‘Eco system of entrepreneurship (F₃)’ and ‘Social stigma (F₁₄)’; which further leads to ‘High-risk problem (F₈)’, ‘Perceived insecurity (F₉)’, ‘Perceived fear (F₁₀)’, ‘Lack of Skills (F₁₁)’, ‘Bear risk and responsibility (F₁₆)’ and ‘Mental maturity (F₁₇)’ and these all above factors lead the direct relationship with ‘Inclination towards entrepreneurship (F₁)’.

6. Policy Implications and Limitations

The ISM model provides a structure of student inclination towards entrepreneurship. The entrepreneurial constraint related factors are primarily at the top, entrepreneurial personality in the middle and entrepreneurial policy related factors at the bottom in the model. The entrepreneurial policy related factors have high driving power. The model shows that head of institute is emerging factor, which influence the inclination of the students towards entrepreneurship. The study shows that student inclination will start from an effective entrepreneurship course, institutional policy, Training and internship, and institutional support but these only work as catalysts after the leading role played by the head of institute. The personality attributes of entrepreneurship are rated above the head of the institution in hierarchy. Hence this shows that the head of institute has to look at the ground level i.e. policy and executions of policy; in the same way he has to see the outcomes in the form of personality attributes of students for entrepreneurship. The head of institute has to determine a way in which the output should be measured in the form of traits of students and to achieve this he will have to play a major role in policy formulation.

The ISM model shows that the social stigma prevalent in our society creates fear and insecurity in the minds of students as well as in the parents; this obstructs entrepreneurship being chosen as a career. This type of thinking and psychological mind set of society creates confusion among skilled youth. Unless Indian society becomes more open minded and helps in promoting an entrepreneurial culture throughout society, the fear surrounding entrepreneurship will continue in the minds of students. Entrepreneurship course, institutional policy, involvement of head of institution and training and internship are the factors that can direct students to fulfil the policies framed by the government and institutional policies. These policies can be monitored through educational institutes where the outcomes and quality will measure the inclination of students towards entrepreneurship. Networking with entrepreneur and bearing risk and responsibility play the role of catalysts in the inclination of students towards entrepreneurship. These factors demonstrate that entrepreneurial attributes are required in future entrepreneurs. Entrepreneurial attributes will influence students to think in this direction and choose entrepreneurship as a career for them.

In this study 25 entrepreneurship inclination factors are identified for modelling and development of the ISM model. But other relevant factors can be considered in future

study. ISM is used to analyze the driving and dependent power of entrepreneurship inclination. Through an ISM approach, we are able to identify inter-relationships between factors but cannot quantify their impact. To determine the influence of each factor, DEMATEL method can be used. The study analysis is based on experts' data although statistical validation of the entrepreneurship inclination factors has not been tackled. Therefore, in future, structural equation modeling (SEM) can be used to find a linear structural relationship between factors and validation of the model.

References

- Aboumasoudi, A.S., S. Mirzamohammadi, A. Makui, and J. Tamošaitienė. 2016. "Development of Network-Ranking Model to Create the Best Production Line Value Chain: A Case Study in Textile Industry." *Economic Computation and Economic Cybernetics Studies and Research* 50 (1): 215–234.
- Alizadeh, R., P.D. Lund, A. Beynaghi, M. Abolghasemi, and R. Maknoon. 2016. "An integrated Scenario-Based Robust Planning Approach for Foresight and Strategic Management with Application to Energy Industry." *Technological Forecasting and Social Change* 104: 162–171.
- Alonso-Gonzalez, A., D. Plata-Rugeles, M. Peris-Ortiz, and C. Rueda-Armengot. 2017. "Entrepreneurial Initiatives in Colombian Universities: The Innovation, Entrepreneurship and Business Center of Sergio Arboleda University." In *Entrepreneurial Universities* (pp. 151-163). Springer International Publishing.
- Anderson, T.; R. Liam, D.R. Garrison, and W. Archer. 2001. "Assessing Teacher Presence in A Computer Conferencing Context." *Journal of the Asynchronous Learning Network* 5 (2): 1–17.
- Arora, P., J.M. Haynie, and G.A. Laurence. 2013. "Counterfactual Thinking and Entrepreneurial Self-Efficacy: The Moderating Role of Self-Esteem and Dispositional Affect." *Entrepreneurship Theory and Practice* 37 (2): 359–385.
- Aslam, S., and S.A.F. Hasnu. 2016. "Issues and Constraints Perceived by Young Entrepreneurs of Pakistan." *World Journal of Entrepreneurship, Management and Sustainable Development* 12 (1): 50–65.
- Audretsch, D.B., and M. Belitski. 2013. "The Missing Pillar: The Creativity Theory of Knowledge Spillover Entrepreneurship." *Small Business Economics* 41 (4): 819–836.
- Bhandari, N.C. 2006. "Intention for Entrepreneurship among Students in India." *Journal of Entrepreneurship* 15 (2): 169–179.
- Brandenburg, M., K. Govindan, J. Sarkis, J., and S. Seuring. 2014. "Quantitative Models for Sustainable Supply Chain Management: Developments and Directions." *European Journal of Operational Research* 233 (2): 299–312.
- Brankovic, N. 2016. "Developing Entrepreneurial Universities in a Post-communist Country: The Case of Bosnia and Herzegovina." *The World Scientific Reference on Entrepreneurship* 4: 111-121.
- Brankovic, N. 2016. "Developing Entrepreneurial Universities in a Post-communist Country: The Case of Bosnia and Herzegovina." *The World Scientific Reference on Entrepreneurship*: In 4 Volumes, 111.
- Brauers, W.K.M., and E.K. Zavadskas. 2012. "A Multi-Objective Decision Support System for Project Selection with an Application for the Tunisian Textile Industry." *E & M: Ekonomie A Management* 15 (1): 28–43.

- Brockhaus Sr, R.H. 1994. "Entrepreneurship and Family Business Research: Comparisons, Critique, and Lessons." *Entrepreneurship: Theory and Practice* 19 (1): 25–39.
- Bruton, G.D., D. Ahlstrom, and K. Obloj. 2008. "Entrepreneurship in Emerging Economies: Where are We Today and Where should The Research Go in the Future." *Entrepreneurship Theory and Practice* 32 (1): 1–14.
- Burns, P. 2010. *Entrepreneurship and Small Business: Start-up, Growth and Maturity*, London: Palgrave Macmillan.
- Cacciotti, G., and J.C. Hayton. 2015. "Fear and Entrepreneurship: A Review and Research Agenda." *International Journal of Management Reviews* 17 (2): 165–190.
- Chang, A. Y., Hu, K. J., & Hong, Y. L. (2013). "An ISM-ANP approach to identifying key agile factors in launching a new product into mass production." *International Journal of Production Research*, 51 (2): 582-597.
- Chaudhary, R., and R. Chaudhary. 2017. "Demographic Factors, Personality and Entrepreneurial Inclination: A study among Indian University Students." *Education+ Training* 59 (2): 171–187.
- Cheraghi, M., and T. Schott. 2014. "Size, Diversity and Components in the Network around An Entrepreneur: Shaped by Culture and Shaping Embeddedness of Firm Relations." In *State of the Art Applications of Social Network Analysis* (pp. 339–358). Springer International Publishing.
- Collins, L., P.D. Hannon, and A. Smith. 2004. "Enacting Entrepreneurial Intent: The gaps between Student Needs and Higher Education Capability." *Education + Training* 46 (8/9): 454–463.
- Corno, F., R. Lal, and S. Colombo. 2015. "Entrepreneurship and New Venture Creation in Italy: Key Issues and Policy Directions." In *Entrepreneurship in BRICS* (pp. 125–140). Springer International Publishing.
- de Barros, A. P., C. S. Ishikiriyama, R.C. Peres and C. F. S. Gomes. 2015. "Processes and Benefits of the Application of Information Technology in Supply Chain Management: An Analysis of the Literature." *Procedia Computer Science*, 55: 698–705.
- Dorado, S., and M.J. Ventresca. 2013. "Crescive Entrepreneurship in Complex Social Problems: Institutional Conditions for Entrepreneurial Engagement." *Journal of Business Venturing* 28 (1): 69–82.
- Garzón, M.D. 2010. "A Comparison of Personal Entrepreneurial Competences between Entrepreneurs and CEOs in Service Sector." *Service Business* 4 (3-4): 289–303.
- Gnoth, J. 2006. "Perceived motivations and barriers for entrepreneurship amongst NZ students." *Proceedings of Understanding the Regulatory Climate for Entrepreneurship and SMEs*, Rencontres de St-Gall, 18–21.
- Gnyawali, D.R. and D.S. Fogel. 1994. "Environments for Entrepreneurship Development: Key Dimensions and Research Implications." *Entrepreneurship Theory and Practice* 18: 43–62.
- Gopal, P.R.C., and J. Thakkar. 2016. "Analysing Critical Success Factors to Implement Sustainable Supply Chain Practices in Indian Automobile Industry: A Case Study." *Production Planning & Control* 27 (12): 1005–1018.
- Hampel-Milagrosa, A., M. Loewe, and C. Reeg. 2015. "The Entrepreneur Makes a Difference: Evidence on MSE Upgrading Factors from Egypt, India, and the Philippines." *World Development* 66: 118–130.
- Kiiru, D., and M. Iravo. 2015. "Determinants of Entrepreneurial Intentions among Vocational Technical Training Institute Students in Kenya: A Survey of CAP Youth Empowerment Institute." *The Strategic Journal of Business and Change Management* 2 (19): 369–375.
- Koudstaal, M., R. Sloof, and M. Van Praag. 2015. "Risk, Uncertainty, and Entrepreneurship: Evidence from a Lab-in-the-Field Experiment." *Management Science* 62 (10): 2897–2915.
- Krueger, N.F., and D.V. Brazeal. 1994. "Entrepreneurial Potential and Potential Entrepreneurs." *Entrepreneurship Theory and Practice* 18: 91–91.

- Kumar, S., S. Luthra, K. Govindan, N. Kumar, and A. Haleem. 2016. "Barriers in Green Lean Six Sigma Product Development Process: An ISM Approach." *Production Planning & Control* 27 (7-8): 604–620.
- Lee, Y., and S.J. Lee. 2006. "The Competitiveness of the Information Systems Major: An Analytic Hierarchy Process." *Journal of Information Systems Education* 17 (2): 211–221.
- Leloux, M., F. Popescu, and A. Koops. 2017. "New Skills for Entrepreneurial Researchers." In: *Advances in Human Factors, Business Management, Training and Education* (pp. 1251–1263). Springer International Publishing.
- Mason, C., and R. Brown. 2014. "Entrepreneurial Ecosystems and Growth Oriented Entrepreneurship." *Final Report to OECD, Paris* 30 (1): 77–102.
- Nambisan, S., and R.A. Baron. 2013. "Entrepreneurship in Innovation Ecosystems: Entrepreneurs' Self-Regulatory Processes and Their Implications for New Venture Success." *Entrepreneurship Theory and Practice* 37 (5): 1071–1097.
- Oehler, A., A. Höfer, and H. Schalkowski. 2015. "Entrepreneurial Education and Knowledge: Empirical Evidence on a Sample of German Undergraduate Students." *The Journal of Technology Transfer* 40 (3): 536–557.
- Ooi, Y.K., and A. Nasiru. 2015. "Entrepreneurship Education as a Catalyst of Business Start-Ups: A Study on Malaysian Community College Students." *Asian Social Science* 11 (18): 350–363.
- Palit, A., and D. Mukherjee. 2011. "India–EU Industry Value Chains: Perspectives and Evidence from Textiles and Software Industries." In *Global Innovation and Entrepreneurship* (pp. 175–190). Springer International Publishing.
- Panahifar, F., P.J. Byrne, and C. Heavey. 2014. "ISM Analysis of CPFR Implementation Barriers." *International Journal of Production Research* 52 (18): 5255–5272.
- Parboteeah, K.P., S.G. Walter, and J.H. Block. 2015. "When does Christian Religion Matter for Entrepreneurial Activity? The Contingent Effect of a Country's Investments into Knowledge." *Journal of Business Ethics* 130 (2): 447–465.
- Pathan, S.K., H.A. Mahesar, and C.A. Ahmed. 2016. "An Analysis of the Entrepreneurship Orientation Among Business Students: A Case Study." *International Research Journal of Arts & Humanities (IRJAH)* 43: 1-10.
- Pathak, A. A., & Varshney, S. 2017. "Challenges faced by women entrepreneurs in rural India: The case of Avika." *The International Journal of Entrepreneurship and Innovation*, 18(1): 65-72.
- Patidar S. 2017. "Opportunities Available for Entrepreneurs in India." *International Research Journal of Engineering and Technology* 4 (5): 2390–2392.
- Pittaway, L., and J. Cope. 2007. "Entrepreneurship Education: A Systematic Review of the Evidence." *International Small Business Journal* 25 (5): 479–510.
- Raichurkar, P., and M. Ramachandran. 2015. "Recent Trends and Developments in Textile Industry in India." *International Journal on Textile Engineering & Processes* 1 (4): 47–50.
- Ravi, V., and R. Shankar. 2005. "Analysis of Interactions among the Barriers of Reverse Logistics." *Technological Forecasting and Social Change* 72 (8): 1011–1029.
- RezaeiZadeh, M., M. Hogan, J. O'Reilly, J. Cunningham, and E. Murphy. 2017. "Core Entrepreneurial Competencies and Their Interdependencies: Insights from A Study of Irish and Iranian Entrepreneurs, University Students and Academics." *International Entrepreneurship and Management Journal* 13 (1): 35–73.
- Shane, S., and N. Nicolaou. 2015. "Creative Personality, Opportunity Recognition and the Tendency to Start Businesses: A Study of Their Genetic Predispositions." *Journal of Business Venturing* 30 (3): 407–419.

- Sharma, Y. 2013. "Women Entrepreneur in India." *IOSR Journal of Business and Management* 15 (3): 9–14.
- Shinnar, R., M. Pruett, and B. Toney. 2009. "Entrepreneurship Education: Attitudes across Campus." *Journal of Education for Business* 84 (3): 151–159.
- Simmons, S.A., J. Wiklund, and J. Levie. 2014. "Stigma and Business Failure: Implications for Entrepreneurs' Career Choices." *Small Business Economics* 42 (3): 485–505.
- Singh Sandhu, M., Fahmi Sidique, S., & Riaz, S. (2011). "Entrepreneurship barriers and entrepreneurial inclination among Malaysian postgraduate students." *International journal of entrepreneurial behavior & research*, 17(4): 428-449.
- Sivaprakasam, R., V. Selladurai, and P. Sasikumar. 2015. "Implementation of Interpretive Structural Modelling Methodology as a Strategic Decision Making Tool in a Green Supply Chain Context." *Annals of Operations Research* 233 (1): 423–448.
- Solesvik, M.Z. 2013. "Entrepreneurial Motivations and Intentions: Investigating the Role of Education Major." *Education + Training* 55 (3): 253–271.
- Somnath, M.S.K.P.T. 2014. "Higher Education and Society In Changing Times: Looking Back and Looking Forward Vision 2020 in India." *Global Journal of Engineering, Science & Social Science Studies* 1 (1): 1–11.
- Spigel, B. 2017. "The Relational Organization of Entrepreneurial Ecosystems." *Entrepreneurship Theory and Practice* 41 (1): 49–72.
- Terjesen, S., N. Bosma, and E. Stam. 2016. "Advancing Public Policy for High-Growth, Female, and Social Entrepreneurs." *Public Administration Review* 76 (2): 230–239.
- Thirupathi, R. M., & Vinodh, S. (2016). "Application of interpretive structural modelling and structural equation modelling for analysis of sustainable manufacturing factors in Indian automotive component sector." *International Journal of Production Research*, 54 (22): 6661-6682.
- Turker, D., & Sonmez Selçuk, S. (2009). "Which factors affect entrepreneurial intention of university students?." *Journal of European Industrial Training*, 33(2): 142-159.
- Van Auken, H., F.L. Fry, and P. Stephens. 2006. "The Influence of Role Models on Entrepreneurial Intentions." *Journal of Developmental Entrepreneurship* 11 (2): 157–167.
- Vasanthakumar, C., S. Vinodh, and K. Ramesh. 2016. "Application of Interpretive Structural Modelling for Analysis of Factors Influencing Lean Remanufacturing Practices." *International Journal of Production Research* 54 (24): 7439–7452.
- Welter, F. 2011. "Contextualizing Entrepreneurship—Conceptual Challenges and Ways Forward." *Entrepreneurship Theory and Practice* 35 (1): 165–184.
- Wennberg, K., S. Pathak, and E. Autio. 2013. "How Culture Moulds the Effects of Self-Efficacy and Fear of Failure on Entrepreneurship." *Entrepreneurship & Regional Development* 25 (9-10): 756–780.
- Wu, H., and S.A. Benson. 2016. "Made in China 2025 and New Trends of Entrepreneurship Education of China: A Socio-Economic-Educational Perspective." *Asian Education Studies* 2 (1): 10–19.
- Yasin, A. Y. M., Mahmood, N. A. A. N., & Jaafar, N. A. N. (2011). "Students' entrepreneurial inclination at a Malaysian polytechnic: A preliminary investigation." *International Education Studies*, 4(2): 198-210.
- Yusof, M., M.S. Sandhu, and K.K. Jain. 2008. "Entrepreneurial Inclination of University Students: A Case Study of Students at Tun Abdul Razak University (UNITAR)." *UNITAR E-Journal* 4 (1): 1–14.

Annexure-1

Iterations to achieve Level of Each Variable

2nd Iteration

Factors	Reachability set	Antecedent set	Intersection set	Level
F ₂	2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25	2,4,7,12	2,4,7,12	
F ₃	3,8,9,10,11,14,16,17	2,3,4,5,6,7,12,13,14,15,18,19,20,21,22,23,24,25	3,14	
F ₄	2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25	2,4,7,12	2,4,7,12	
F ₅	3,5,6,8,9,10,11,13,14,15,16,17,18,19,20,21,22,23,24,25	2,4,5,7,12	5	
F ₆	3,6,8,9,10,11,13,14,15,16,17,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	
F ₇	2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25	2,4,7,12	2,4,7,12	
F ₈	8,9,10,11,16,17	2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25	8,9,10,11,16,17	2
F ₉	8,9,10,11,16,17	2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25	8,9,10,11,16,17	2
F ₁₀	8,9,10,11,16,17	2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25	8,9,10,11,16,17	2
F ₁₁	8,9,10,11,16,17	2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25	8,9,10,11,16,17	2
F ₁₂	2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25	2,4,7,12	2,4,7,12	
F ₁₃	3,6,8,9,10,11,13,14,15,16,17,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	
F ₁₄	3,8,9,10,11,14,16,17	2,3,4,5,6,7,12,13,14,15,18,19,20,21,22,23,24,25	3,14	
F ₁₅	3,6,8,9,10,11,13,14,15,16,17,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	
F ₁₆	8,9,10,11,16,17	2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25	8,9,10,11,16,17	2
F ₁₇	8,9,10,11,16,17	2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25	8,9,10,11,16,17	2
F ₁₈	3,6,8,9,10,11,13,14,15,16,17,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	
F ₁₉	3,6,8,9,10,11,13,14,15,16,17,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	
F ₂₀	3,6,8,9,10,11,13,14,15,16,17,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	
F ₂₁	3,6,8,9,10,11,13,14,15,16,17,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	
F ₂₂	3,6,8,9,10,11,13,14,15,16,17,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	
F ₂₃	3,6,8,9,10,11,13,14,15,16,17,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	
F ₂₄	3,6,8,9,10,11,13,14,15,16,17,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	
F ₂₅	3,6,8,9,10,11,13,14,15,16,17,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	

F ₂₅	2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25	2,4,7,12	2,4,7,12	
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3rd Iteration

Factors	Reachability set	Antecedent set	Intersection set	Level
F ₂	2,3,4,5,6,7,12,13,14,15,18,19,20,21,22,23,24,25	2,4,7,12	2,4,7,12	
F ₃	3,14	2,3,4,5,6,7,12,13,14,15,18,19,20,21,22,23,24,25	3,14	3
F ₄	2,3,4,5,6,7,12,13,14,15,18,19,20,21,22,23,24,25	2,4,7,12	2,4,7,12	
F ₅	3,5,6,13,14,15,18,19,20,21,22,23,24,25	2,4,5,7,12	5	
F ₆	3,6,13,14,15,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	
F ₇	2,3,4,5,6,7,12,13,14,15,18,19,20,21,22,23,24,25	2,4,7,12	2,4,7,12	
F ₁₂	2,3,4,5,6,7,12,13,14,15,18,19,20,21,22,23,24,25	2,4,7,12	2,4,7,12	
F ₁₃	3,6,13,14,15,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	
F ₁₄	3,14	2,3,4,5,6,7,12,13,14,15,18,19,20,21,22,23,24,25	3,14	3
F ₁₅	3,6,13,14,15,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	
F ₁₈	3,6,13,14,15,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	
F ₁₉	3,6,13,14,15,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	
F ₂₀	3,6,13,14,15,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	
F ₂₁	3,6,13,14,15,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	
F ₂₂	3,6,13,14,15,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	
F ₂₃	3,6,13,14,15,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	
F ₂₄	3,6,13,14,15,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	
F ₂₅	3,6,13,14,15,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	
F ₂₅	2,3,4,5,6,7,12,13,14,15,18,19,20,21,22,23,24,25	2,4,7,12	2,4,7,12	

4th Iteration

Factors	Reachability set	Antecedent set	Intersection set	Level
F ₂	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	2,4,7,12	2,4,7,12	
F ₄	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	2,4,7,12	2,4,7,12	
F ₅	5,6,13,15,18,19,20,21,22,23,24,25	2,4,5,7,12	5	
F ₆	6,13,15,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	4
F ₇	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	2,4,7,12	2,4,7,12	
F ₁₂	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	2,4,7,12	2,4,7,12	
F ₁₃	6,13,15,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	4
F ₁₅	6,13,15,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	4

	,25	1,22,23,24,25		
F ₁₈	6,13,15,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	4
F ₁₉	6,13,15,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	4
F ₂₀	6,13,15,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	4
F ₂₁	6,13,15,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	4
F ₂₂	6,13,15,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	4
F ₂₃	6,13,15,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	4
F ₂₄	6,13,15,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	4
F ₂₅	6,13,15,18,19,20,21,22,23,24,25	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	6,13,15,18,19,20,21,22,23,24,25	4
F ₂₅	2,4,5,6,7,12,13,15,18,19,20,21,22,23,24,25	2,4,7,12	2,4,7,12	4

5th Iteration

Factors	Reachability set	Antecedent set	Intersection set	Level
F ₂	2,4,5,7,12	2,4,7,12	2,4,7,12	
F ₄	2,4,5,7,12	2,4,7,12	2,4,7,12	
F ₅	5	2,4,5,7,12	5	5
F ₇	2,4,5,7,12	2,4,7,12	2,4,7,12	
F ₁₂	2,4,5,7,12	2,4,7,12	2,4,7,12	

6th Iteration

Factors	Reachability set	Antecedent set	Intersection set	Level
F ₂	2,4,7,12	2,4,7,12	2,4,7,12	6
F ₄	2,4,7,12	2,4,7,12	2,4,7,12	6
F ₇	2,4,7,12	2,4,7,12	2,4,7,12	6
F ₁₂	2,4,7,12	2,4,7,12	2,4,7,12	6